

1. Claims 1-26 are pending. Claims 1, 5, 9, 10, 13, 18, and 21 are independent.

2. Applicant's arguments filed June 23, 2008 have been fully considered but they are not persuasive.

Claims 18-22, 25, and 26 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Koshiyouji et al. (US 5,150,227) ("Koshiyouji"). Other claims were rejected as being unpatentable over Koshiyouji et al. in view of other art. Applicant's arguments with respect to the other claims rely/are based on arguments with respect to the claims rejected under 102(b) using Koshiyouji et al.

Applicant traversed the rejection of claim 18. See pages 12-13 of the remarks. Applicant pointed out the section of Koshiyouji at col. 3, line 58 – col. 4, line 5 and concluded that "Accordingly, from this description, one skill in the art would expect to find that the carriage device 4 substantially extends across the length of the casing 2". The examiner disagrees with Applicant's interpretation of the section of Koshiyouji at col. 3, line 58 - col. 4, line 5 with reference to Figs. 1 and 2. The casing 2 not only contains and supports the carriage device 4 and carriage support members 5 and 6 but also "contains a driving mechanism located on the side of carriage-supporting member 6". See col. 4, lines 6-16 and Fig. 1. The driving mechanism includes a step motor 13, a belt 12, a steel belt, pulleys 10 and 11, all of which are located on the side of carriage-supporting member 6. The driving mechanism further includes a mechanism that looks like a transmission shaft, located between transmission 14 and pulley 10 (Fig. 1), for

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transmitting driving force from motor 13 to pulley 10 so as to drive the belt 12 that moves the carriage device 4 in a direction along the supporting member 6. With all this mechanism on the side of supporting member 6, one skilled in the art would not expect to find that the carriage device 4 substantially extends across the length of the casing 2, i.e., along the main scanning direction. In the contrast, one skilled in the art would find that the length of the original platen (3) relative to the length of the casing 2 along the main scanning direction is reasonably shown, since one skilled in the art would have expected that the original platen 3 be positioned next to the operation panel 18. From the above, the length of the longest side of Koshiyouji's carriage device 4 is smaller than a length of the platen 3 in a direction generally parallel to the scanning surface and generally perpendicular to the (sub) scanning direction, and therefore, claim 18 is met by Koshiyouji. See art rejection below in sections 5+.

3. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

In claim 25, it is unclear what the claimed "means for supporting the document on a scanning surface" means because according to the specification, the platform 210 is the only thing that provides support for "a scanning surface" and support for "means for supporting the document". There are not two different things in the specification that support the two claim limitations, i.e., "means for supporting the document" and "a scanning surface". Thus, it is unclear what the claimed "means for supporting a document on a scanning surface" means.

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4. Claims 5-8, 9-12, 15-17, and 21-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 21 recites "means for scattering the light from the document". This feature is not found in the specification. Therefore, the specification does not provide enablement for this claimed feature.

Claims 22-26 are rejected as being dependent on rejected claim 21.

Claim 5 recites "scattering the light from a document ...", which corresponds to the claim 21 limitation "means for scattering the light from the document", is not described in the specification.

Claims 6-8 are rejected as being dependent on rejected claim 5.

Claims 9 and 10 each recite "a scanner head configured to move along a scanning direction" "generally perpendicular to the length of the opening", the length and width of the platform being greater than the length and width of the opening. It is not seen in the specification with reference to the drawings how the scanner head moves along a scanning generally perpendicular to the length of the opening. According to the claimed features, it seems that the dimension (length) of the platform, which is along the left-right direction as viewed in Figs. 4 and 7, for example, is much

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longer than the dimension (width) of the platform. However, the specification does not clearly describe such. Therefore, it is concluded that the specification does not have clear support for the claimed features.

Claims 11 and 12 are rejected as being dependent on rejected claim 9.

Claims 15-17 are rejected as being dependent on rejected claim 10.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 13, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Koshiyouji et al. (US 5,150,227).

Regarding claim 18, Koshiyouji et al. (Koshiyouji) discloses a scanner (Figs. 1 and 2) comprising a scanner body (casing 2), a scanning platform (3) mounted adjacent to an opening of the scanner body (2), wherein the scanning platform (3) comprises a scanning surface configured to support a document (O), a scan head (carriage device 4) configured to move in a scanning direction (subscanning direction) within the scanner body (casing 2), wherein a length of a longest side of the scan head (4) is smaller than a length of the platform (3) in a direction (the main scanning direction) generally parallel to the scanning surface and generally perpendicular to the scanning direction (the subscanning direction), and a light source (19) mounted to the scan head 94) and

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configured to project light through the opening (col. 3, line 53 – col. 4, line 35, Figs. 1 and 2).

Regarding claim 1, Koshiyouji et al. discloses a scanner comprising a scanner casing (casing 2) having an opening (the opening for receiving transparent scanning platform 3 in Fig. 1), a scanning head (on carriage device 4) configured to move along a scanning direction (the subscanning direction) within the scanner casing (2), and a light source (19) mounted on the scanning head (on carriage device 4) (Fig. 2), wherein the light source (19) is configured to project light through the opening of the scanner casing (2), and wherein a longest side of the light source (19) is smaller than the opening along a dimension (in the main scanning direction) generally perpendicular to the scanning direction (the subscanning direction) of the scanning head (on carriage device 4) (col. 3, line 53 – col. 4, line 35, Figs. 1 and 2).

Regarding claim 13, the claimed scanner is met by Koshiyouji et al. discussed above. The scanner of Koshiyouji et al. comprises an outer casing (2) with an opening section, a platform (3) mounted over the opening section and comprising a platform surface for supporting the document, and a scanning head (including carriage device 4) positioned within the outer casing (2), wherein the scanning head is configured to move forward in a scanning direction (the subscanning direction) to scan the document, and wherein the scanning head (including carriage device 4) comprises a shell body (carriage device 4) with a longest side (along the main scanning direction), wherein a

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length of the longest side is smaller than a length of the opening in a dimension (along the main scanning direction) generally parallel to the platform surface and generally perpendicular to the scanning direction (the subscanning direction), and a light source (19) mounted on the longest side of the shell body (carriage device 4), wherein the light source (19) has a longest length smaller than (or equal to) the length of the longest side of the shell body (carriage device 4) (Figs. 1 and 2, col. 3, line 53 – col. 4, line 35).

Regarding claim 14, the light source (19) is a lamp tube.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 19-22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiyouji et al. (US 5,150,227) in view of Applicant's admitted prior art.

Regarding claims 19 and 20, Koshiyouji further discloses a photo-sensor (CCD line sensor 21) positioned inside the scan head (4) (col. 4, lines 35-46, Fig. 2). Koshiyouji does not disclose a plurality of reflective mirrors of different lengths positioned inside the scan head (carriage device 4), the plurality of reflecting mirrors

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configured to reflect light onto the photo-sensor as a cone of light, each of the plurality of reflecting mirrors having a longest side associated with the respective one of the different lengths, and the longest side fitting within the cone of light. However, this feature is taught by Applicant's admitted prior art (Fig. 2, paragraph 0008 and Fig. 1, paragraph 0007). The plurality of reflecting mirrors, i.e., the second and third mirrors (the two shorter mirrors 114) that have different lengths, are positioned substantially within the cone of light shown in Fig. 2 (paragraph 0008). The scanning head (110) is understood to be moving within an outer casing (102) in the subscanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of scan head (110) of Applicant's prior art comprising a plurality of reflective mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor and therefore, reduces the cost of the scanner.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scanning head (having lens array 20 and CCD line sensor 21) of Koshiyouji, which does not have a plurality of reflective mirrors, with the scan head (110) of Applicant's prior art having a plurality of reflective mirrors, in order to reduce the cost of the scanner.

Claim 21 is rejected with the limitation "means for scattering the light from the document" not being considered. Thus, insofar as the claim is understood, Koshiyouji discussed for claim 18 above discloses a scanning a scanning system (Figs. 1 and 2)

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comprising means (11-14) for moving a scan head (on carriage device 4) in a scanning direction (the subscanning direction) within a scanner body (casing 2), and means (illumination device 19) for projecting light through an opening (where the document table is fitted on the casing 2) of the scanner body (2) onto a document (O), wherein the longest length (in the main scanning direction) of the means (19) for projecting light is smaller than a length of the opening along a dimension generally perpendicular to the scanning direction (the subscanning direction) of the scan head (on carriage device 4) (col. 3, line 53 - col. 4, line 35).

Koshiyouji does not disclose means for reflecting the light along an optical path between the document (O) and a lens, wherein the light is reflected to the lens as a cone of light, although Koshiyouji discloses a lens (20) (Fig. 2, col. 4, lines 35-46). However, this feature is taught by Applicant's admitted prior art (Figs. 1 and 2, paragraph 0008). The prior art scanning system comprises a scan head (110) comprising first, second and third reflecting mirrors (114) for sequentially reflecting light from the document to form a light cone that focuses on a lens (116), according to paragraph 0008. The second and third reflecting mirrors (114), i.e., the mirrors with shorter lengths, correspond to the claimed "means for reflecting the light along an optical path between the document and the lens, wherein the light is reflected to the lens as a cone of light".

One of ordinary skill in the art would have understood that this reduction type of scan head (110) of Applicant's prior art comprising a plurality of reflective mirrors

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requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to a full size photo-sensor and therefore is less expensive in general.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scan head (having lens array 20 and CCD line sensor 21) of Koshiyouji, which does not have a plurality of reflective mirrors, with the scan head (110) of Applicant's prior art having a plurality of reflective mirrors, in order to reduce the case of the scanner.

Regarding claim 22, the means for reflecting the light of the obvious system of Koshiyouji in view of Applicant's prior art (the second and third reflecting mirrors 114 in Applicant's admitted prior art Figs. 1 and 2, paragraph 0008) is substantially positioned within the cone of light.

Regarding claim 24, both the means for projecting light of Koshiyouji and Applicant's admitted prior art are mounted on the scan head (see 19 on scan carriage device 4 of Koshiyouji and 112 on scan head 110 of Applicant's prior art Fig. 1).

Regarding claim 25, insofar as the claim is understood, Applicant's prior art further comprises a platform (106 in Fig. 1) for supporting the document on the scanning surface thereof. The dimension in the main scanning direction of the scan head of Applicant's prior art is generally parallel to the scanning surface of the platform (106 in Fig. 1).

Regarding claim 26, see linear guide (60 and driving device (10-14) of Koshiyouji.

Regarding claims 2 and 4, see discussion for claims 19 and 20 with respect to the second and third reflecting mirrors of Applicant's admitted prior art Fig. 2 for reflecting the light onto a photo-sensor as a cone of light, and the second and third reflecting mirrors each having a longest side associated with the variable lengths, the longest sides fitted within the cone of light.

Regarding claim 3, Koshiyouji further discloses a platform (3 in Fig. 2) configured to support a document (O). Koshiyouji does not show that the platform (3) is larger than the opening of the scanner casing (2). However, a platform (106) larger than the opening (104) of a scanner casing (102) along the dimension (in the main scanning direction) generally perpendicular to the scanning direction (the subscanning direction) of the scanning head (110) is taught by Applicant's admitted prior art (Fig. 1, paragraph 0007). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a platform of such a dimension that is larger than the opening (104) along the main scanning direction as the platform of Koshiyouji in order to facilitate attachment of the outer edges of the platform to the interior sidewalls of the casing (2 in Fig. 1 of Koshiyouji).

Claims 5 and 6 are rejected with "scattering the light from a document ..." of claim 5 not being considered (refer to the rejection under 112, 1st paragraph). Thus, insofar as the claims are understood, see discussions for claims 19 and 20 with respect to the second and third reflective mirrors (114 of Applicant's prior art Fig. 2) sequentially positioned along an optical path between the document and a lens, which discussions refer to the discussion for claim 18 above, for the steps of the method claims 5 and 6 being corresponding to the limitations in the apparatus claims 19, 20 and 18.

Further regarding claim 6, also see discussion for claims 2 and 4 above.

Regarding claim 7, see discussion for claim 3 above. Further, paragraph 0007 of Applicant's admitted prior art discussion in reference to prior art Fig. 1 describes that the area of the scanning platform (106) is larger than the area of the opening section (104) to facilitate the attachment of the outer edges of the scanning platform (106) to the interior sidewalls of the outer casing (102), which means that both the length and the width of the platform (106) are larger than the length and the width of the opening of the scanner housing.

Regarding claim 8, based on the discussion of claim 5 and referring to Fig. 1 of Koshiyouji et al. and Applicant's prior art Fig. 2, one of ordinary skill in the art would have realized that the scan line produced when the light is projected from the light source (19 of Koshiyouji et al., which corresponds to light source 112 in Applicant's prior art Fig. 2 except that 19 is shorter than 112, relatively speaking, since 19 is shorter than

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the width of the platform 106 of Fig. 2) onto the platform (106 of Applicant's Fig. 2), inherently defines the maximum width of scanning on the document, and the maximum width is greater than the length of the light source (refer to 19 of Koshiyouji et al.) in the main scanning direction.

9. Claim 23 is rejected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, provided the rejection under 112, 1st paragraph, is overcome.

10. The following is an examiner's statement of reasons for allowance:

With regard to claim 23 (refer to section 9 above), neither Applicant's admitted prior art nor Koshiyouji (US 5,150,227) teaches that the means for projecting the light is substantially positioned within the cone of light discussed for claim 21 upon which claim 23 depends. Please refer to the illumination device (19) of Koshiyouji and the light source (112) of Applicant's admitted prior art Fig. 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Cheukfan Lee/
Primary Examiner, Art Unit 2625